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L10: Entry 1 of 8

File: PGPB

Aug 8, 2002

PGPUB-DOCUMENT-NUMBER: 20020107295

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020107295 A1

TITLE: Breathable barrier films containing cavated fillers

PUBLICATION-DATE: August 8, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Edmundson, Charles Edward	Roswell	GA	US	
Day, Bryon Paul	Canton	GA	US	

US-CL-CURRENT: 521/50

## ABSTRACT:

A breathable, stretch-thinned barrier film having improved strength, processability and/or breathability is formed from a mixture of a thermoplastic polymer and cavated filler particles such as cyclodextrin. The cavated filler particles provide the film with enhanced breathability to water vapor due to their ring-like, conical, cylindrical or otherwise hollow molecular structure, yet the film remains substantially impermeable to aqueous liquids. The enhanced breathability occasioned by the cavated particles permits the use of relatively low filler levels and correspondingly high polymer levels, thereby enhancing the film strength. The filler may melt during extrusion of the molten polymer into a film, facilitating smooth processing, and re-crystallize into particles after the film is formed and cooled.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	FIGS	Draw Desc	Image
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☒ 2. Document ID: US 20020004350 A1

L10: Entry 2 of 8

File: PGPB

Jan 10, 2002

PGPUB-DOCUMENT-NUMBER: 20020004350

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020004350 A1

TITLE: Film having high breathability induced by low cross-directional stretch

PUBLICATION-DATE: January 10, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Morman, Michael Tod	Alpharetta	GA	US	
Hwang, Patricia Hsiaoyin	Alpharetta	GA	US	
Ono, Audrie Tomoko	Atlanta	GA	US	
Welch, Howard Martin	Woodstock	GA	US	
Morell, Charles John	Roswell	GA	US	
Ohan, Faris	Knoxville	TN	US	
Potnis, Prasad Shrikrishna	Duluth	GA	US	
Daley, Michael Allen	Alpharetta	GA	US	
Conyer, Sjon-Paul Lee	Roswell	GA	US	

US-CL-CURRENT: 442/381; 428/910, 442/393, 442/394, 442/398, 442/400, 442/401, 442/417

ABSTRACT:

A breathable, substantially liquid impermeable film and laminate are provided for use in a wide variety of personal care garments and protective garments. The film, and laminate containing the film, are extendible in a cross-direction to a stretched width which is at least 25% greater than an original, unstretched width. The film and laminate have a first water vapor transmission rate of at least about 500 grams/m.sup.2-24 hours coinciding with the unstretched width. The film and laminate have a much higher second water vapor transmission rate which is at least about 225% of the first water vapor transmission rate, and not less than about 4000 grams/m.sup.2-24 hours, coinciding with a stretched width that is only 25% greater than the stretched width.

Full	Title	Classen	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☒ 3. Document ID: US 6348258 B1

L10: Entry 3 of 8

File: USPT

Feb 19, 2002

US-PAT-NO: 6348258

DOCUMENT-IDENTIFIER: US 6348258 B1

TITLE: Breathable film having organic filler

DATE-ISSUED: February 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Topolkaraev; Vasily Aramovich	Appleton	WI		
Harrington; Kevin Matthew	Dunwoody	GA		
Walton; Glynis Allicia	Roswell	GA		
Chi-Ching Ying; Sandy	Roswell	GA		
Hetzler; Kevin George	Sparta	NJ		

US-CL-CURRENT: 428/317.9; 524/430, 524/503, 524/505, 524/507, 524/512, 524/513, 524/514, 524/520

ABSTRACT:

A breathable film having improved processing properties and reduced cost includes a breathable film-forming layer composition including a matrix polymer, a particulate

organic filler, and a compatibilizer. The particulate organic filler is incompatible with the matrix polymer and tends to agglomerate when mixed with the matrix polymer alone. The compatibilizer achieves thermodynamic equilibrium between the matrix polymer and filler within a defined filler particle size range suitable for producing stretched breathable film. The film processes more easily than breathable films containing inorganic fillers, and is less expensive to manufacture.

30 Claims, 5 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 3

Full	Title	Abstract	Print	Review	Classification	Date	Reference	Sequences	Attachments
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☒ 4. Document ID: US 6245401 B1

L10: Entry 4 of 8

File: USPT

Jun 12, 2001

US-PAT-NO: 6245401  
DOCUMENT-IDENTIFIER: US 6245401 B1

TITLE: Segmented conformable breathable films

DATE-ISSUED: June 12, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ying; Sandy Chi-Ching	Alpharetta	GA		
Boggs; Lavada Campbell	Marietta	GA		
Hetzler; Kevin George	Sparta	NJ		
Mildenhall; Glen Thomas	Marietta	GA		
Morman; Michael Tod	Alpharetta	GA		
Schiffer; Dan Kenneth	Marietta	GA		
Shawver; Susan Elaine	Roswell	GA		

US-CL-CURRENT: 428/58; 428/212, 428/218, 428/315.5

ABSTRACT:

Unitary films are provided having at least first and second film segments which extend adjacent one another and are permanently joined together. The first and second segments have different compositions whereby the unitary film includes distinct segments having varied physical properties such as, for example, varied levels of high water-vapor transmission rates and/or elasticity. The unitary films and laminates thereof are well suited for use as outer covers in personal care articles and various other barrier articles.

36 Claims, 17 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 5

Full	Title	Abstract	Print	Review	Classification	Date	Reference	Sequences	Attachments
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RMK	Draw Desc	Image
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☒ 5. Document ID: US 6072005 A

L10: Entry 5 of 8

File: USPT

Jun 6, 2000

US-PAT-NO: 6072005

DOCUMENT-IDENTIFIER: US 6072005 A

TITLE: Breathable films and process for producing them

DATE-ISSUED: June 6, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kobylyivker; Peter Michailovich	Marietta	GA		
Hetzler; Kevin George	Alpharetta	GA		

US-CL-CURRENT: 525/240; 524/536

## ABSTRACT:

A breathable film having improved physical and barrier properties includes a stretched impact modified polyolefin matrix and a particulate filler. The impact modified polyolefin matrix includes at least one impact polypropylene copolymer, alone or in combination with other polymers. The film, and laminates including the film, provide excellent moisture breathability and excellent barrier to penetration by liquids. Laminates including the film may be used in diaper outer covers and other applications requiring breathability and resistance to penetration by liquids.

32 Claims, 5 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☒ 6. Document ID: US 6045900 A

L10: Entry 6 of 8

File: USPT

Apr 4, 2000

US-PAT-NO: 6045900

DOCUMENT-IDENTIFIER: US 6045900 A

TITLE: Breathable filled film laminate

DATE-ISSUED: April 4, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Haffner; William Bela	Kennesaw	GA		
McCormack; Ann Louise	Cumming	GA		

US-CL-CURRENT: 428/315.9; 428/316.6, 428/317.9, 428/332, 442/370, 442/394, 442/398

## ABSTRACT:

A breathable barrier laminate is disclosed having a first film layer comprising a microporous breathable barrier film; a second film layer comprising a breathable filled film which comprises about 50% to about 70% by weight filler and an amorphous polymer such as an elastomeric ethylene polymer having a density less than 0.89

g/cm.sup.3 ; and a third fibrous layer comprising a breathable outer layer, such as a nonwoven web of spunbonded fibers. The multiple layers can be thermally laminated wherein lamine has a peel strength in excess of 200 grams and a WVTR in excess of 300 g/m.sup.2 /day.

30 Claims, 3 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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NAME	Draw Desc	Image
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☐ 7. Document ID: US 6002064 A

L10: Entry 7 of 8

File: USPT

Dec 14, 1999

US-PAT-NO: 6002064

DOCUMENT-IDENTIFIER: US 6002064 A

TITLE: Stretch-thinned breathable films resistant to blood and virus penetration

DATE-ISSUED: December 14, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kobylyvker; Peter Michailovich	Marietta	GA		
Hetzler; Kevin George	Alpharetta	GA		

US-CL-CURRENT: 604/367; 428/323, 428/327, 428/339, 604/358, 604/366

ABSTRACT:

A stretch-thinned polymeric film is formed from a mixture of a polymer matrix including a low crystallinity propylene polymer having not more than about 30% crystallinity, with a particulate filler. The stretch-thinned film is breathable to water vapor yet resistant to penetration by liquids and viruses. The film can be laminated to a nonwoven web, and is useful in a wide variety of medical apparel and related products.

49 Claims, 5 Drawing figures  
Exemplary Claim Number: 1  
Number of Drawing Sheets: 2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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NAME	Draw Desc	Image
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☒ 8. Document ID: US 5955187 A

L10: Entry 8 of 8

File: USPT

Sep 21, 1999

US-PAT-NO: 5955187

DOCUMENT-IDENTIFIER: US 5955187 A

TITLE: Microporous film with liquid triggered barrier feature

DATE-ISSUED: September 21, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McCormack; Ann Louise	Cumming	GA		
Strack; David Craige	Canton	GA		
Shultz; Jay Sheldon	Roswell	GA		
Cartwright; William F.	Roswell	GA		
Blaney; Carol A.	Roswell	GA		

US-CL-CURRENT: 428/315.5; 428/315.7, 428/315.9, 428/316.6, 428/317.1, 428/317.9,  
428/319.3, 428/913, 442/370, 442/372, 442/374

## ABSTRACT:

A self-regulating breathable microporous film layer transmits water vapor at normal use conditions, and reduces or eliminates the vapor transmission when the vapor in the environment becomes excessive. The film layer includes a voided polymer matrix and a plurality of fine water-swellaable filler particles disposed within the voids. When there is an excess of vapor, the filler particles swell to block or partially block transmission of vapor through the voids and the film layer.

59 Claims, 9 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 4

Full	Title	Classen	Front	Review	Classification	Date	Reference	Sequences	Attachments
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(L8 AND L9).USPT,PGPB.	8

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